



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

Via Fax and Express Mail

Gwen Zervis, Case Manager
Bureau of Federal Case Management
New Jersey Department of Environmental Protection
401 East State Street
CN-028
Trenton, New Jersey 08625

Re: Transmittal of Comments on the May 15, 2000 Letters entitled, NJDEP Review of the MW19/Hotspot 1 Area Remedial Investigation Report; Free Product Remedial Alternative Analysis; Lead Hot Spots B and C; and the Reports entitled, Evaluation of Remediation of Groundwater by Natural Attenuation; Free Product Volume Analysis Report, dated May 2000, and the Quarterly Monitoring Report for the First Quarter, dated April 2000, for the L.E. Carpenter Superfund Site, Wharton Borough, Morris County, New Jersey

Dear Ms. Zervis:

The U. S. Environmental Protection Agency (EPA) is in receipt of the above referenced documents pertaining to the L.E. Carpenter Superfund Site, located in Wharton Borough, Morris County, New Jersey. The documents were submitted by RMT on behalf of the Potentially Responsible Party. EPA has completed its review of the documents and has the following comments, contained on the attachment. Thank you in advance for this opportunity to review and comment on these documents. If I can be of any further assistance, or if you have any questions or comments on this letter, please give me a call at (212) 637-4411.

Yours truly,

Stephen Cipot, Remedial Project Manager
Southern New Jersey Remediation Section

Attachment

cc: Kim O'Connell, SNJRS (w/Attachment)
Andy Crossland, PSB (w/Attachment)
Stephen Cipot, SNJRS (w/Attachment) ✓

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 30% Postconsumer)

346490



ATTACHMENT TO EPA TRANSMITTAL LETTER

Comments on the May 15, 2000 Letter entitled NJDEP Review of the MW19/Hotspot 1 Area Remedial Investigation Report:

1. The letter states that delineation of the MW19/Hotspot 1 Area is complete. This is based on the fact that groundwater flow is heavily influenced by the presence of coarse permeable base material along an interceptor sewer transect on Ross Street, immediately downgradient of the site. To support this argument, groundwater contours are presented in an attached figure 1. EPA has previously suggested that the presence of sewer lines could have an effect on local groundwater flow, and may serve as a preferential pathway. While EPA is pleased that these concerns have been taken into consideration, the presentation and conclusions drawn are largely conjectural and not supported. The sharp turn in flow direction indicated on the figure is based on water levels in MW-19-8 and MW-19-7, which are the same, and so not definitive of the conclusion. Moreover, if the sewer is serving as a preferential pathway, this finding makes for a more complicated case than presented, and the logic is flawed, for two main reasons. First, the identification of the sewer route in itself is not sufficient data upon which to rule out that groundwater (and contaminants) may still be flowing to the north, perhaps under the sewer line, and so follow the previously identified gradient, thus making MW-19-8, side gradient to flow.

Second, if the sewer line is acting as a preferred pathway, as claimed, it is also a preferred pathway for contaminant transport, as well. This has been overlooked, thus contaminants migrating along the pathway may not be apparent in MW-19-8. Therefore, EPA reaffirms its previously stated position that delineation **is** not complete, and an additional monitoring well is needed.

2. In addition, as mentioned above, the possibility of vertical contaminant migration has not been explored, and still remains to be addressed. The floating behavior of separate phase LNAPL, which is cited as the rationale for limiting the investigation to delineate shallow groundwater only, does not apply to dissolved phase contaminants as these tend to move **with** groundwater flow. Furthermore, although one well point has shown an upwards gradient, it in no way precludes the possibility that contaminants are present at greater depths. Nor does it prove that an upward vertical gradient persists most of the time. EPA restates its position that the question of a vertical distribution of contaminants must be investigated with a downgradient well.

Comments on the May 15, 2000 Letter entitled Free Product Remedial Alternative Analysis

1. EPA agrees that the proposal to conduct a focused feasibility study (FFS) to investigate ways for augmenting LNAPL recovery, is an important next step in ultimately cleaning site groundwater. The first technology proposed is the Fenton's Reagent technology for the dissolved phase of the plume. While bench tests may demonstrate this to be effective in reducing contaminants, experience at other sites has shown that bench testing is not a sufficient indicator that it will actually work in the field. In addition to the bench testing, a limited pilot test should be conducted in the field.
2. When considering in situ oxidation such as Fenton's Reagent, it is important to recognize that such technologies have a strong negative impact on biodegradation, which has been proposed for the dissolved phase of the plume.
3. EPA concurs with the proposal to evaluate additional technologies to enhance the recovery of LNAPL. Alternative 2, French Drain/Recovery Trench, and Alternative 3, Multi Phase Extraction, are both acceptable technologies. Additional technologies should also be evaluated as part of the FFS, which might be used either singly or in conjunction, and may include heating, flushing, and surfactants.

Comments on the May 15, 2000 Letter entitled Lead Hot Spots B and C:

1. As EPA has previously stated, attempts to tie on-site lead to historical mining activities must be adequately supported. While the Potentially Responsible Party has previously stated that historical mining activities (or mining spoils) were located at the site, no concrete supporting data has ever been submitted. This data might include mining maps, old topographic maps, an old tax map, or other detailed reference or documentation which specifically locates a mine on the site. Merely stating that mining took place in the general vicinity is not sufficient evidence upon which to alter the Record of Decision (ROD) remedy. In addition, as previously mentioned, the collection and comparison of background lead levels should be undertaken if the argument is to be made that the presence of lead is intrinsic to the area.
2. Regardless of the source of lead, high concentrations in the shallow soils present a hazard to human health and the environment that must be addressed. The full extent of contamination must be delineated. It is not clear why the effort was not completed as planned in the most recent r

of field work. As EPA has previously stated, the full extent of contamination must be delineated, and calculations presented showing the amount of impacted soil above the 600 parts per million ROD action level that must be removed. If the extent of contamination is shown to be prohibitive, or related to background conditions, then an alternative can be considered. However, EPA does not believe that present data suggests that either of these are the case.

Comments on the Report, Evaluation of Remediation of Groundwater by Natural Attenuation

1. Natural attenuation data presented suggest that the aquifer within the LNAPL area has become anaerobic as a result of biodegradation. It seems likely that the aquifer was initially aerobic, but that oxygen and other electron acceptors have been depleted by biological activity. Currently, in the LNAPL area, very little degradation is likely occurring. However, as contaminants migrate out of the anaerobic area beneath the LNAPL, conditions become aerobic and degradation is likely to be active. Subsequently, the system can be conceptualized as active degradation on the perimeter of the plume, with little or no degradation in the area under the LNAPL.
2. As a result of the above dynamics, the extent of the plume is likely partly controlled by the location of the aerobic-anaerobic boundary - and not solely by the actual flow of groundwater.
3. The bioscreen modeling presented in the report should be largely viewed as an academic exercise and not as an accurate representation of site conditions. First, the model assumes that degradation is occurring at a single rate along the flow path. As noted above, degradation is likely occurring only at the fringe of the plume. Also, the inputs to the model are largely based on literature values and general assumptions, not on site specific characteristics.
4. Pages 7-5 and 7-6 present a number of calculations of the percent of contaminants which have been degraded. The subsequent figures are based on an assumed high source input and a resulting assumed high degradation rate to produce the current known extent of the plume. However, this type of reverse engineering exercise and the use of these inputs is not a valid way to determine what percentage of the contaminant mass has been degraded.
5. Notwithstanding the above, it does appear that biodegradation has effectively kept the plume to a very slow rate of expansion. The rate of expansion may be most easily studied by examining changes in the concentration of natural

attenuation parameters at wells along the periphery of the plume. Have the oxygen and ORP values at MW-22 and MW-25 decreased with time? If natural attenuation processes were to be accepted as the means of remediation, the time frame for clean up would likely be most controlled by the extent of source removal and the supply of oxygen in the aquifer. Efforts to increase source removal are to be addressed in a pending FSS document. It seems reasonable to consider enhancing the oxygen content of the aquifer as a possible, effective alternative to pump and treat. As mentioned in the above comments on the Free Product Remedial Alternative Analysis, this could be done as pilot work in tandem with other technologies designed to enhance source removal.

Free Product Volume Analysis Report, dated May 2000

1. The calculations in the report appear to follow the prescribed estimation methods, and the 44,000 gallons of free product arrived at is probably the most accurate estimate made to date of the amount of LNAPL present. Even though there could be a large margin of error associated with this number, as stated, it is clear that the current rate of LNAPL recovery is grossly inadequate and needs to be augmented. Moreover, the 20% to 30% recovery rate mentioned is also a gross assumption, and would only apply to the currently operating technology. Therefore, as pointed out in the report, the estimates and conclusions have large error bars associated with them, and ultimately, must be considered accordingly.

Comments on the Quarterly Monitoring Report for the First Quarter, dated April 2000

1. Approximately 119 gallons of free product were recovered during the first quarter of the year. This low rate of recovery continues to confirm EPA's position that the LNAPL recovery system is grossly inadequate and needs to be augmented.